

REMARKS/ARGUMENTS

Claims 1-6, 8-19 and 23-32 remain in the application. All of these claims stand rejected. Claims 7, 20-22 and 33 have been canceled.

The limitations of canceled claim 7 have been merged into claim 1. The limitations of canceled claim 20 have been merged into 10. Claims 27 and 30 have been rewritten in independent form. Claims 8 and 28 have been amended to respectively reflect the amendments to claims 1 and 27. The introduction of a "default server" into claims 1, 10, 27, 28 and 30 is supported, at least, by the text on p. 20, lines 9-12 of the Specification, and by FIG. 7 (box 720).

None of the afore-mentioned claim amendments is believed to add new matter.

1. Objection to Claims 2-9, 11-20 and 22-32

Claims 2-9, 11-20 and 23-32 are objected to because they are written in dependent form, but begin with the articles "A" or "An". Applicant respectfully traverses this objection. MPEP 608.01(n)(I)(A) provides several examples of acceptable multiple dependent claims, and each of the exemplary claims begins with the article "A". Dependent claims starting with either an indefinite or definite article have traditionally been accepted by the USPTO, so long as they properly refer back to a parent claim. As a result, claims 2-9, 11-20 and 23-32 have not been amended.

2. Rejection of Claims 1-6, 8, 10-13, 15, 16, 18 and 20-26 Under 35 USC 102(b)

Claims 1-6, 8, 10-13, 15, 16, 18 and 20-26 stand rejected under 35 USC 102(b) as being anticipated by U.S. Pat. No. 6,128,657 to Okanoya et al. (hereinafter, "Okanoya").

The Examiner's rejection of claims 1-6, 8 and 23-26 are believed to be moot as a result of the limitations of claim 7 being merged into claim 1. The Examiner's rejection of claims 21 and 22 is moot because these claims have been canceled.

With respect to claim 10, applicant notes that the limitations of previous claim 20 have been merged into this claim. As a result, the Examiner's rejection of previous claim 20 is believed to be pertinent to the rejection of amended claim 10. However, applicant notes that the Examiner's rejection of claim 20 states, "As to claim 20, see the rejection of claim 7 above." See, 3/9/2006 Office Action, sec. 17, p. 5. However, when looking "above", applicant cannot find any rejection of claim 7 over Okanoya's teachings. Rather, claim 7 only appears to be rejected "later", over the combined teachings of Okanoya and Kanai. As a result, applicant's amendment of claim 10 to include the limitations of previous claim 20, and the Examiner's failure to provide a rejection of claim 20, renders the rejections of claims 10-13, 15, 16 and 18 moot.

3. Rejection of Claims 7, 14, 17 and 27-29 Under 35 USC 103(a)

Claims 7, 14, 17 and 27-29 stand rejected under 35 USC 103(a) as being unpatentable over U.S. Pat. No. 6,128,657 to Okanoya et al. (hereinafter, "Okanoya") in view of U.S. Pat. No. 5,864,679 to Kanai et al. (hereinafter, "Kanai").

With respect to claim 7, the Examiner admits that the limitations added by dependent claim 7 are missing from what is taught in Okanoya. However, applicant notes that claim 1 has now been amended to incorporate the limitations of claim 7. Thus, the Examiner's rejection of claim 7 will be discussed below as if it is a rejection of applicant's claim 1.

With respect to amended claim 1, and former claim 7, the Examiner asserts that:

Kanai teaches a method as in claim 1, further comprising determining when said identified attribute-based category is new and assigning said new attribute-based category to at least one of said plurality of front-end servers (Col. 14 Ln.56-57, Col. 15 Ln.1-25).

It would be obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Kanai and Okanoya because the teaching of Kanai would improve the system of Okanoya by providing a transaction routing unit operated by deterministic algorithm which selects optimum transaction processor (Kanai Col. 15 [Ln.] 65-67).

3/9/2006 Office Action, sec. 26-27, p. 7.

Applicant respectfully disagrees. What Kanai teaches is how to **route** a “newly arrived transaction”, and not how to **assign** a new attribute-based category to a front-end server. Explaining further, applicant notes that, in col. 14, line 56 – col. 16, line 11, Kanai teaches the use of a data arrangement table 4B and routing table 4C by a transaction routing unit 4 (see *also*, FIGS. 7-9). Applicant notes, however, that neither of these tables (i.e., table 4B or 4C) maintains assignments between front-end servers and attribute-based categories of transactions. Rather, Kanai uses a transaction type to index table 4C (FIG. 9) and determine which of a number of transaction arguments should be used to specifically identify the data required by the transaction. Kanai then uses these transaction arguments to index table 4B (FIG. 8) and determine which of a number of transaction processors is specifically assigned to access the data required by the transaction.

In contrast to what Kanai discloses, the invention of applicant’s claim 1 routes a transaction based on whether an attribute-based category that is associated with the transaction has been assigned to a particular front-end server. Thus, instead of determining whether the data required by a transaction “is” at a certain processor (as Kanai teaches), the invention of applicant’s claim 1 projects where data required by a transaction “may be” based on a server’s association with a particular attribute-based “category”. Although the invention of applicant’s claim 1 may at times be less accurate than Kanai’s method (which,

according to Kanai, is a “deterministic algorithm”; see, col. 15, lines 65-67), applicant’s method can often provide close to the same accuracy, but with faster routing and less overhead.

In some ways, the invention of applicant’s claim 1 is more akin to Kanai’s “probabilistic algorithm” (see, col. 11, line 64 – col. 12, line 20). However, in contrast to Kanai’s maintenance of the processing history and processing cost for each of a number of routed transactions, the invention of applicant’s claim 1 routes transactions based on assignments of attribute-based transaction “categories” to particular front-end servers.

In response to the above arguments, the Examiner indicated in his Final Office Action that, “the invention as claimed requires the selection of a front-end server based. . .in part on the front-end server **corresponding to** the attribute-based category.” See, 6/13/2005 Final Office Action, sec. 47, p. 12 (emphasis added). Applicant respectfully disagrees. What applicant’s claim 1 recites is, “identifying at least one of a plurality of front-end servers to process said transaction based. . .at least in part on said front-end servers **being assigned to execute transactions corresponding to** said attribute-based category” (emphasis added). Applicant draws the Examiner’s attention to this difference in language because Kanai does not teach that servers are assigned to execute transactions corresponding to attribute-based categories of transactions. Rather, and as discussed above, Kanai teaches 1) a “deterministic algorithm” for routing transactions, wherein transactions are routed based on where the data they need “is”, and 2) a “probabilistic algorithm” for routing transactions, wherein transactions are routed based on specific transaction processing histories and processing costs. **In either case, Kanai does not teach that a server is assigned to execute transactions corresponding to a particular attribute-based category.**

Although the historical routing information maintained by Kanai’s “probabilistic algorithm” does include “feature parameters” for routed transactions, it is noted that both feature parameters, and the servers to which transactions are routed, are associated with specific historical transactions.

Thus, instead of just routing a transaction based on 1) "identifying at least one attribute-based category for said transaction", and then 2) "identifying at least one of a plurality of front-end servers to process said transaction based at least in part on said identified attribute-based category of said transaction and at least in part on said front-end servers being assigned to execute transactions corresponding to said attribute-based category" (as set forth in applicant's claim 1), Kanai's routing algorithm must 1) identify feature parameters for a transaction, 2) identify historical transactions associated with the identified feature parameters, and do so for each of a plurality of transaction processors, and 3) weigh i) how close the feature parameters of the identified historical transactions are to those of the current transaction that needs to be routed, against ii) the cost of routing the current transaction to each of the transaction processors associated with the identified historical transactions. See, for example, Kanai's teachings at col. 20, line 62 – col. 21, line 44. The complexity of Kanai's routing algorithm stems, at least in part, from the fact that Kanai does not teach the *assignment* of servers to execute transactions corresponding to different attribute-based categories.

Applicant's claim 1 is believed to be allowable, at least, because neither Okanoya nor Kanai teach the limitations of former claim 7 that were added to claim 1 in this Amendment.

Applicant's claim 10, for which the Examiner does not provide any detailed basis for rejecting, is believed to be allowable over the combined teachings of Okanoya and Kanai for reasons similar to why claim 1 is believed to be allowable. Applicant's claim 17 is believed to be allowable, at least, because it depends from claim 10.

With respect to claim 14, the Examiner asserts that Kanai teaches "a user table for assigning said at least one attribute-based category to said transaction" in col. 15, lines 45-62. Applicant disagrees. What Kanai discusses in this paragraph is how to look up transaction arguments in a routing table. The user table recited in applicant's claim 14 is for assigning the attribute-based category, which has to be done before the assigned attribute-based category can be used

to look something up. Providing a user table for assigning an attribute-based category to a transaction implies that the transaction does not automatically carry this information, which appellant believes to be novel when combined with the code for routing a transaction described in his claim 10.

Applicant's claim 14 is believed to be allowable, at least, for the above reasons, and for reasons similar to why applicant's claim 1 is believed to be allowable (*supra*).

Applicant's claims 27-29 are believed to be allowable, at least, for reasons similar to why applicant's claim is believed to be allowable (*supra*).

4. Rejection of Claims 9 and 19 Under 35 USC 103(a)

Claims 9 and 19 stand rejected under 35 USC 103(a) as being unpatentable over U.S. Pat. No. 6,128,657 to Okanoya et al. (hereinafter, "Okanoya") in view of U.S. Pat. No. 6,681,244 B1 to Cross et al. (hereinafter, "Cross").

With respect to claim 9, the Examiner admits that the limitations added by dependent claim 9 are missing from what is taught in Okanoya. However, the Examiner asserts that Cross teaches "determining a status of an attribute-based category; and deallocating said attribute-based category from said front-end server to which it is assigned when said status is inactive" in col. 6, lines 15-27. Applicant respectfully disagrees.

What Cross teaches is a switch's removal of a client machine's address from its network table if the switch does not detect a data packet from the client within a predetermined time interval. Cross' switch is not a front-end server. Nor does Cross teach or suggest how its switch might be related to a transaction routing method such as that which is taught by Okanoya. Claims 9 and 19 are therefore believed to be allowable in that a combination of Okanoya's and Cross' teachings does not yield the

inventions of these claims. These claims are also believed to be allowable for the reason that their parent claims are believed to be allowable.

5. Rejection of Claims 30-33 Under 35 USC 103(a)

Claims 30-33 stand rejected under 35 USC 103(a) as being unpatentable over U.S. Pat. No. 6,128,657 to Okanoya et al. (hereinafter, "Okanoya") in view of U.S. Pub. No. 2002/0161917 A1 to Shapiro et al. (hereinafter, "Shapiro").

With respect to claim 30, the Examiner asserts that Shapiro teaches, "after a predetermined time of not processing a transaction corresponding to an attribute-based category in its table, broadcasting an indication of this event to a plurality of workload managers that can route transactions to the front-end server (. . . poor goodness. . ." page 6 paragraphs 0070/0071)." See, 3/9/2006 Office Action, sec. 41, p. 10. Appellant respectfully disagrees. The cited paragraphs (0070/0071) of Shapiro say nothing about 1) attribute-based transaction categories, 2) the assignment of attribute-based transaction categories to front-end server, 3) the broadcast of such assignments *from front-end servers*, or 4) maintaining an indication of when a transaction corresponding to the attribute-based category was last processed by the front-end server. Rather, Shapiro only talks about a "node" periodically pinging its neighbors to assess whether the qualities of paths connecting it to other nodes are still "good".


Applicant's claim 30 is believed to be allowable for at least the above reasons.

Applicant's claims 31 and 32 are believed to be allowable, at least, because they depend from claim 30.

6. Conclusion

In summary, the art of record does not teach nor suggest the subject matter of applicant's amended claims 1-6, 8-19 and 23-32. These claims are therefore believed to be allowable, and accordingly, applicant respectfully requests the issuance of a Notice of Allowance.

Respectfully submitted,
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